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Biographical Notices.

MEMOIR OF JAMES FERGUSON.

The country at large is deeply indebted to the enlightened and patriotic conductors of the Library of Entertaining Knowledge, for the exertions they are now making to supply the public with valuable information, in simple language, divested of all pedantry and charlatanism. Their labours, conducted as they are in an enlightened and liberal spirit, will form a new era in the country;—and as knowledge is power, their efforts unquestionably add to the physical strength, as well as to the moral and intellectual energy of the nation.

Nothing tends to stimulate the mental efforts of men in a humble sphere more effectually than directing their attention to the example of others; who, although labouring under the same disadvantages as themselves, have, by perseverance and native genius surmounted all the difficulties of their condition, and rendered themselves respectable, and even independent, in society.

James Ferguson, the subject of the memoir which we are about to transcribe from the Library of Entertaining Knowledge, presents an example admirably calculated to stimulate men of genius in a humble sphere of life; and it is delightful to find in this self-taught, obscure, and indigent shepherd, the first-rate talents and the most amiable moral dispositions united.

We wish the able editors of the Library of Entertaining Knowledge would favour us with a sketch of the life of the late Charles Sylvester, one of the most extraordinary men of the age, and one, too, who, like Ferguson, was his own instructor. In the hope that the hint may not be lost, and that we shall, ere long, be favoured with an ample memoir of Mr. Sylvester, the materials for which his talented son could readily furnish, we shall repeat a brief editorial paragraph which we published soon after the lamented death of a man whom we had the pleasure to rank amongst our most intimate friends:—

"The eminence of Mr. Sylvester, in mechanical, chemical, and philosophical pursuits, leads us to hope, and believe, that some friend, competent to the task, will favour us with an ample memoir of an individual who possessed so many claims to the esteem of mankind. His talents, which were of the very highest order, were accompanied with the most unassuming manners, and we might truly say of him, that he was

"In wit a man, simplicity a child."

In argument he was cool, patient, and logical—solicitous only for the establishment of truth, and not for victory, except over what he deemed error or prejudice.

It is highly to the credit of his genius and perseverance, that he set out in life under disadvantages which would have proved, to ordinary men, an insurmountable barrier to future eminence, or even mediocrity in science. We have heard him say that he had arrived at the age of eighteen years before he could read or write; and yet his letters and his manuscript copy for publication, both of which have frequently passed through our hands, evinced no want of the early education which had been denied him. He could almost command his own price for the articles which he furnished for the scientific journals, to which he contributed; and many of the most valuable papers to be found in several of our Encyclopedias were from his pen. In some recent conversations which we had with Mr. Sylvester, in Liverpool, he mentioned to us several most ingenious and useful inventions upon which he was engaged; and which, had it pleased Providence to spare his life, he would, in all probability, have perfected, to the advantage of his country, and of the amiable family he has left to lament the loss of so valuable a friend and parent." ☞

SELF EDUCATION.

(From the Library of Entertaining Knowledge, Third Volume, Part the First, just published.)

Among self-educated men there are few who claim more of our admiration than the celebrated James Ferguson. If any one was literally his own instructor in the very elements of knowledge, it was he. Acquisitions that have scarcely in any other case, and probably never by one so young, been made without the assistance either of books or a living teacher, were the discoveries of his solitary and almost illiterate boyhood. There are few more interesting narratives in any language than the account which Ferguson himself has given of his early history. He was born in the year 1710, a few miles from the village of Keith, in Banffshire; his parents, as he tells us, being in the humblest condition of life (for his father was merely a day labourer,) but religious and honest. It was his father's practice to teach his children himself to read and write as they successively reached what he deemed the proper age; but James was too impatient to wait till his regular turn came. While his father was teaching one of his elder brothers, James was secretly occupied in listening to what was going on; and, as soon as he was left alone, used to get hold of the book and work hard in endeavouring to master the lesson which he had thus heard gone over. Being ashamed, as he says, to let his father know what he was about, he was wont to apply to an old woman who lived in a neighbouring cottage to solve his difficulties. In this way he actually learned to read tolerably well before his father had any suspicion that he knew his letters. His father at last, very much to his surprise, detected him one day reading by himself, and thus found out his secret.

When he was about seven or eight years of age, a simple incident occurred which seems to have given his mind its first bias to what became afterwards its favourite kind of pursuit. The roof of the cottage having partly fallen in, his father, in order to raise it again applied to it a beam, resting on a prop in the manner of a lever, and was thus enabled, with comparative ease, to produce what seemed to his son quite a stupendous effect. The circumstance set our young philosopher thinking; and after a while, it struck him that his father in using the beam had applied his strength to its extremity, and this, he immediately concluded, was probably an important circumstance in the matter. He proceeded to verify his notion by experiment; and having made several levers, which he called bars, soon not only found that he was right in his conjecture, as to the importance of applying the moving force at the point most distant from the fulcrum, but discovered the rule or law of the machine, namely, that the effect of any form or weight made to bear upon it is always exactly proportioned to the distance of the point on which it rests from the fulcrum. "I then (says he) thought that it was a great pity that by means of this bar a weight could be raised but a very little way. On this, I soon imagined that by pulling round a wheel, the weight might be raised to any height, by tying a rope to the weight, and winding the rope round the axle of the wheel; and that the power gained must be just as great as the wheel was broader than the axle was thick; and found it to be exactly so, by hanging one weight to a rope put round the wheel, and another to the rope that coiled round the axle." The child had thus, it will be observed, actually discovered two of the most important elementary truths in mechanics—the lever, and the wheel and axle; he afterwards hit upon others; and all the while, he had not only possessed neither book nor teacher to assist him, but was without any other tools than a simple turning lathe of his father's, and a little knife wherewith to fashion his blocks and wheels, and the other contrivances he needed for his experiments. After having made his discoveries, however, he next, he tells us, proceeded to write an account of them; thinking his little work, which contained sketches of the different machines drawn with a pen, to be the first treatise ever composed of the sort. When some time after a gentleman showed him the whole in a printed book, although he found that he had been anticipated in his inventions, he was much pleased, as he was well entitled to be, on thus perceiving that his unaided genius had already carried him so far into what was acknowledged to be the region of true philosophy.

It is a ludicrous blunder that the French astronomer, Lalande, makes in speaking of Ferguson, when he designates him, as "*Berger au Roi d'Angleterre en Ecosse;*" the King of England's Shepherd for Scotland. He had no claim to this pompous title; but it is true that he spent some of his early years as a keeper of sheep, though not in the employment of the state, but of a small farmer in the neighbourhood of his native place. He was sent to this occupation, he tells us, as being of weak body; and while his flock was feeding around him he used to busy himself in making models of mills, spinning wheels, &c. during the day, and in studying the stars at night, like his predecessors of Chaldea. When a little older, he went into the service of another farmer, a respectable man called James Glashan, whose name well deserves to be remembered. After the labours of the day, young Fer-

guson used to go at night to the fields, with a blanket about him and a lighted candle, and there laying himself down on his back, pursued for long hours his observations on the heavenly bodies. "I used to stretch (says he) a thread with small beads on it, at arms-length between my eye and the stars, sliding the beads on it till they hid such and such stars from my eye, in order to take their apparent distances from one another, and then, laying the thread down on a paper, I marked the stars thereon by the beads." "My master (he adds) at first laughed at me; but when I explained my meaning to him, he encouraged me to go on; and, that I might make fair copies in the day time of what I had done in the night, he often worked for me himself. I shall always have a respect for the memory of that man." Having been employed by his master to carry a message to Mr. Gilchrist, the minister of Keith, he took with him the drawings he had been making, and showed them to that gentleman. Mr. Gilchrist upon this put a map into his hands, and having supplied him with compasses, ruler, pens, ink, and paper, desired him to take it home with him, and bring back a copy of it. "For this pleasant employment (says he) my master gave me more time than I could reasonably expect; and often took the thrashing flail out of my hands, and worked himself while I sat by him in the barn, busy with my compasses, ruler, and pen." This is a beautiful, we may well say, and even a touching picture—the good man so generously appreciating the worth of knowledge and genius, that, although the master, he voluntarily exchanges situations with his servant, and insists upon doing the work himself that must be done, in order that the latter may give his more precious talents to their more appropriate vocation. We know not that there is on record an act of homage to science and learning more honourable to the author.

Having finished his map, Ferguson carried it to Mr. Gilchrist's, and there he met Mr. Grant, of Achoynamey, who offered to take him into his house, and make his butler give him lessons. "I told Squire Grant (says he) that I should rejoice to be at his house as soon as the time was expired for which I was engaged with my present master. He very politely offered to put one in my place, but this I declined." When the period in question arrived, accordingly he went to Mr. Grant's, being now in his twentieth year. Here he found a good friend, and a very extraordinary man, in Cantley, the butler, who had first fixed his attention by a sun-dial, which he happened to be engaged in painting on the village school-house, as Ferguson was passing along the road, on his second visit to Mr. Gilchrist. Dialing, however, was only one of the many accomplishments of this learned butler, who Ferguson assures us was profoundly conversant both with arithmetic and mathematics, played on every known instrument except the harp, understood Latin, French, and Greek, and could let blood and prescribe for diseases. These multifarious attainments he owed, we are told, entirely to himself and to nature; on which account Ferguson designates him "God Almighty's scholar."

From this person Ferguson received instructions in Decimal Fractions and Algebra, having already made himself master of Vulgar Arithmetic, by the assistance of books. Just as he was about, however, to begin Geometry, Cantley left his place for another in the establishment of the Earl of Fife, and his pupil thereupon determined to return home to his father.

Cantley, on parting with him, had made him a present of a copy of Gordon's Geographical Grammar. The book contains a description of an artificial globe, which is not, however, illustrated by any figure. Nevertheless, "from this description, (says Ferguson,) I made a globe in three weeks at my father's, having turned the ball thereof out of a piece of wood; which ball I covered with paper, and delineated a map of the world upon it; made the meridian ring and horizon of wood, covered them with paper and graduated them; and was happy to find that by my globe (which was the first I ever saw) I could solve the problems."

For some time after this he was very unfortunate. Finding that it would not do to remain idle at home, he engaged in the service of a miller in the neighbourhood, who, feeling probably that he could trust to the honesty and capacity of his servant, soon began to spend all his own time in the alehouse, and to leave poor Ferguson at home, not only with every thing to do, but frequently nothing to eat. A little oatmeal, mixed with cold water, was often, he tells us, all he was allowed. Yet in this situation he remained a year, and then returned to his father's, very much the weaker for his fasting. His next master was a Dr. Young, who having induced him to enter his service by a promise to instruct him in medicine, not only broke his engagement as to this point, but used him in other respects so tyrannically, that, although engaged for half a year, he found he could not remain beyond the first quarter, at the expiration of which, accordingly, he came away without receiving any wages, having "wrought for the last fortnight, (says he,) as much as possible with one hand and arm, when I could not lift the other from my side." This was in consequence of a severe hurt he had received, which the Doctor was too busy to look to, and by which he was confined to his bed for two months after his return home.

Reduced as he was, however, by exhaustion and actual pain, he could not be idle. "In order (says he) to amuse myself in this low state, I made a wooden clock, the frame of which was also of wood, and it kept time pretty well. The bell on which the hammer struck the hours was the neck of a broken bottle." A short time after this, when he had recovered his health, he gave a still more extraordinary proof of his ingenuity, and the fertility of his resources for mechanical invention, by actually constructing a timepiece, or watch moved by a spring. But we must allow him to give the history of this matter in his own words:—

"Having then (he says) an idea how any timepiece could go by a weight and a line, I wondered how a watch could go in all positions, and was sorry that I had never thought of asking Mr. Cantley, who could have very easily informed me. But happening one day to see a gentleman ride by my father's house, (which was close by a public road,) I asked him what o'clock it then was? He looked at his watch, and told me. As he did that with so much good nature, I begged of him to show me the inside of his watch; and, though he was an entire stranger, he immediately opened the watch, and put it into my hands. I saw the spring box, with part of the chain round it, and asked him what it was that made the box turn round? He told me that it was turned round by a steel spring within it. Having then never seen any other spring than that of my father's gun-lock, I asked how a spring within a box could turn the box so often round as to wind all the chain upon it? He answered, that the spring was long and thin; that one end of it was fastened to the axis of the box, and the other end to the inside of the box; that the axis was fixed, and the box was loose upon it. I told him that I did not yet thoroughly understand the matter. 'Well, my lad, (says he,) take a long thin piece of whalebone; hold the end of it fast between your finger and thumb, and wind it round your finger; it will then endeavour to unwind itself; and if you fix the other end of it to the inside of a small hoop, and leave it to itself, it will turn the hoop round and round, and wind up the thread tied to the outside of the hoop.' I thanked the gentleman, and told him that I understood the thing very well. I then tried to make a watch with wooden wheels, and made the spring of whalebone; but found that I could not make the wheel go when the balance was put on, because the teeth of the wheels were rather too weak to bear the force of a spring sufficient to move the balance; although the wheels would run fast enough when the balance was taken off. I inclosed the whole in a wooden case, very little bigger than a breakfast tea-cup; but a clumsy neighbour one day looking at my watch, happened to let it fall, and turning hastily about to pick it up, set his foot upon it, and crushed it all to pieces, which so provoked my father that he was almost ready to beat the man, and discouraged me so much, that I never attempted to make such another machine again, especially as I was thoroughly convinced I could never make one that would be of any real use."

[To be continued.]

Scientific Notices.

Comprehending Notices of new Discoveries or Improvements in Science or Art; including, occasionally, singular Medical Cases; Astronomical, Mechanical, Philosophical, Botanical, Meteorological, and Mineralogical Phenomena, or singular Facts in Natural History, Vegetation, &c.; Antiquities, &c.

SOLAR LIGHT.

Our townsman, Mr. Bywater, optician, &c. in Pool-lane, has addressed a second letter to the editor of the *Globe*, following up the train of his former speculations respecting the theory of Mr. Brown, who either discovered, or supposed he discovered, that all nature, whether animal, vegetable, or mineral, abounded with organized life. We have no space here to analyze Mr. Bywater's reasoning, but we shall give the whole of his letter. The sun, in his opinion, is the grand agent in nature, and the theory is by no means at variance with preconceived opinions. The glorious sun is in all probability the soul of the universe, and the Persians, in raising up altars to that fountain of light, probably regarded it as the source not only of light and heat, but of animation. Of one thing we are well assured, and that is, that if the sun were abstracted from the universe even for a very short period, all nature would droop and die, and all our human speculations arrive at a speedy termination.

TO THE EDITOR OF THE GLOBE.

SIR,—In my letter of the 4th of May, which you honoured with a place in your valuable journal, I expressed a hope that Mr. Brown's speculations would so far attract public notice as to induce some of your scientific readers to take up the investigation; but not having seen in your paper any other remarks on the subject, I take the liberty of sending you a few more observations, under a persuasion that they will not be unworthy your further attention.

When I first began my inquiry with the microscope, I had no expectation of associating the results of that inquiry with any general principle or extensive natural phenomena; but the facts I obtained were of such an extraordinary character, that it was difficult to avoid being drawn into theoretic speculations respecting their probable connexion with other phenomena of a more general nature.

After having witnessed numberless instances of evident vitality, that were completely opposed to all our established opinions respecting animal existence, my attention was naturally directed to other physical parts of nature, in which it is generally admitted that no living organized structures exist; and in passing along the descending scale of vitality, I found it difficult to draw the line where vitality ended, and where chemical action began: and it was this difficulty that chiefly induced me to take a more extended view of the subject, and ultimately led me to the conclusion that solar light is the chief stimulating source of both vital and chemical processes.

It is a well known fact that the effects which are generally ascribed to what are termed unknown chemical affinities, as well as the effects ascribed to a vital principle, are involved in great obscurity; nor will any of our popular notions on this subject relieve us from the perplexity, except we assert what there is not the slightest direct evidence to prove, viz. that the particles of unorganized matter are possessed of an inherent force that is capable of producing all the effect we ascribe to chemical affinities. Thus, when a skilful chemist, by the rules of science, brings together certain substances, and in certain quantities, an action takes place among them that produces new compounds, that are quite distinct in their nature and character from the substances whence they were derived; and so peculiar are these transforming results, most of which are promoted by the influence of solar light, that several eminent chemists have referred them to what they term elective attraction, clearly indicating that there is something belonging to processes of this nature that is incompatible with our general notions concerning the unorganized particles of inert matter; and what deserves particular attention, is the strong resemblance there is between these transforming changes and several results we ascribe to the influence of a vital principle.

To show how strongly the sun's rays promote vital as well as chemical processes, let an egg be imbedded in the sand of a tropical climate and exposed to solar light and its consequent heat or action, and a living bird will be

the result of this influence. Also, if a seed be placed in a suitable soil, at the return of spring, and duly exposed to the rays of the sun and their consequent heat, a perfect plant will likewise be the result of the same solar influence.

Now, let it be remembered that this bird and this plant, whose existence was promoted by the influence of light, are the chemists of nature, for they instinctively, by the aid of their organized structure, as well as man, who is the chemist of art, bring together such substances, and in such quantities, as will chemically act upon each other and produce new compounds, quite as distinct in their character and nature from the substances from which they were derived, as those new products we obtain by what are termed chemical processes; therefore, when we see animal, vegetable, and chemical processes inducing results that have in some important points such a strong resemblance to each other, and that this resemblance is increased by the influence of solar light, what conclusion can be more consistent with the rules of sound philosophy than this—that the rays of the sun are the stimulating source of all those transforming changes which we witness in the mineral, vegetable, and animal kingdoms? This conclusion will relieve us from the apparently unphilosophical inference, that the infused particles of unorganized matter, which, in the microscope, have the appearance of animation, are small animals; for, if the particles of these infusions are acted upon by the same energetic power that hatched the egg and induced the growth of the embryo seed, we may anticipate an animated appearance among them in every chemical change, though it is evident that the final results of these apparently animated movements must be very different to the results of vegetable or animal processes; for in the two latter cases this powerful agent acts on particles under the direction of organized bodies, while in the former case it only acts on the particles of unorganized matter.

Although these remarks have been chiefly restricted to minute physical changes which take place in the mineral, vegetable, and animal kingdoms, yet we cannot for a moment entertain the idea that the operative influence of solar light is confined to the surface of the earth. No, it may justly be inferred, from the evident economy of secondary causes, and its own extreme activity, that it traverses the earth and atmosphere, and answers various other important purposes in the more extensive departments of terrestrial nature. That it is capable of traversing the atmosphere, is clearly proved by its passage from the sun to the earth; and I shall endeavour to show that a portion of this energetic stream of imponderable matter enters into union with the constituent particles of the air, and in all probability is retained there, in order to promote vital and chemical operations, while other portions of this same agent form a different combination with attenuated terrestrial matter, and traverses the earth and atmosphere under another character than that of light. If light, and its consequent heat, promote the hatching of an egg and the germination of an embryo seed, does it not point out the probability that this agent is the source whence these newly organized structures will obtain their future supply of vital energy? Also, we find that the atmosphere is an essential medium for their obtaining a regular supply of this vital energy; therefore, does it not equally show the probability that a part of this vitalizing torrent, which perpetually flows from the sun and traverses our atmosphere, is retained and deposited in the air, in order to supply plants and animals with this very energy? and if it be asked what direct proof have we that solar light is detained in the atmosphere, I answer, the whole train of meteorological phenomena most unequivocally support the inference. In support of these opinions, we need only take a general view of the electrical phenomena which we know depend on the presence of atmospheric air; for they all concur in verifying the conclusion that the agent which produces these phenomena has the activity of solar light, and that in the dark it generally has the appearance of light that is partially liberated by the action of the machine from some elastic terrestrial matter to which it has become united. That light is retained in the atmosphere may also be inferred from those vivid and brilliant displays which we often witness in extremely dark nights during a thunder-storm; and, agreeably to the view we are taking of the subject, it is evident that when the air becomes loaded with dense clouds and highly charged with solar light, it is then in a fit and powerful state for producing what we term electrical effects, as it is overcharged with an agent that possessed before this union the power of moving at the rate of 200,000 miles in a second of time; therefore it is peculiarly well calculated by its own inconceivable energy to destroy the balance of the air, and produce those electrical storms and tornadoes which are so frequently exhibited in tropical climates.

This opinion, perhaps, is still more directly supported by the process of combustion; for, in this process, heat, or a suitable motion, is generated by the retained light, during which new combinations are formed between the oxygen of the air and the particles of the combustible body, light, which had been united to the oxygen, is abundantly liberated by this transforming process, which its own energy has been the means of promoting.

The simplicity and consequences of this combustible process are of the highest importance to man; for without a deposit of light like the one we have mentioned, and some such simple means as combustion to render it subservient to our wants, our nights would have been dark and dismal indeed; for without this process we should have generally been in darkness from the setting until the rising sun.

After having noticed the electric phenomena, and referred them to the effort which solar light that is retained in the atmosphere makes to resume its former activity, we may turn our attention a few moments to what are termed the magnetic phenomena, as there are abundant proofs that they also result from the influence of solar light, though, when acting as the magnetic agent, it must be under a different terrestrial modification to what it is when acting in its electrical character.

The first analogical fact I shall mention is the instantaneous action of the magnetic agency, as its effect in this point corresponds to the momentum of light. Secondly, experimental facts show that it is even more attenuated than the electric or galvanic fluids, though not so attenuated as when simply acting in the character of light. And, in the third place, when a stream of the electric or galvanic fluid is passed along steel needles, they instantly become magnetic by its action upon them: they consequently furnish us with a tolerable solution respecting the nature of this unseen and unknown magnetic agent, by showing, in the clearest manner, that it is of the same nature as the electric agency which we have endeavoured to prove is solar light united to some elastic terrestrial matter. Another circumstance, viz.—the influence which the magnetic agency has over some chemical processes, favours the idea that its energy is derived from light, for we know that solar light is a very strong chemical agent; and if it be true, as some philosophical writers have stated, that certain of the prismatic rays of light, when passed along very fine steel wires, have the power to render them magnetic, the evidence in favour of the opinion we have just been advocating becomes still more direct and satisfactory.

By the analagous aid which we obtain from the magnetizing energy of the electric fluid, we discover the probability that the magnetic agency is light united to some small portions of terrestrial matter, and by the polar action of this magnetic agency on what are termed magnetic bodies, we have the most unequivocal proofs that this agent continually circulates through the earth and atmosphere, which must be of the highest importance in the economy of nature, if it be true that solar light is the active source of vital and chemical processes.

Perhaps some persons may think that too much has been ascribed to the influence of solar light; but let it be remembered that light was specially created by the fiat of the all-wise Creator, and that the same almighty power which created this agent also formed that terrestrial state of things on which it was to operate; therefore we need not wonder that so many important ends should be brought about by such simple means, when the whole was designed by unerring wisdom.

Although we may simplify our theoretic speculations by referring physical changes in general to the variously-modified influence of one active agent, whose independent existence has been clearly demonstrated, instead of contending for so many agents, whose existence has only been inferred from the effects they were contrived to explain; still I am well aware that we have much to learn before we can clearly comprehend this agent in all its bearings; and I am equally convinced we have much to unlearn before we shall justly appreciate that simplicity which evidently belongs to secondary causes; but time and experience will ultimately remove many of those difficulties which at present obscure and perplex all our physiological investigations. I remain, Sir, yours, most respectfully,

Liverpool, July 31, 1829. JOHN BYWATER.

P. S. Among those agents whose distinct existence has never been proved, but only inferred, we may reckon the magnetic fluid, the nervous fluid, the electric fluid, galvanic fluid, the electro-magnetic fluid, thermo-magnetic fluid, caloric, under its latent and radiating characters, and the agency that gives birth to chemical affinities, all of which are only creatures of the imagination, and must ultimately be overwhelmed by that theoretic confusion which they are continually creating.

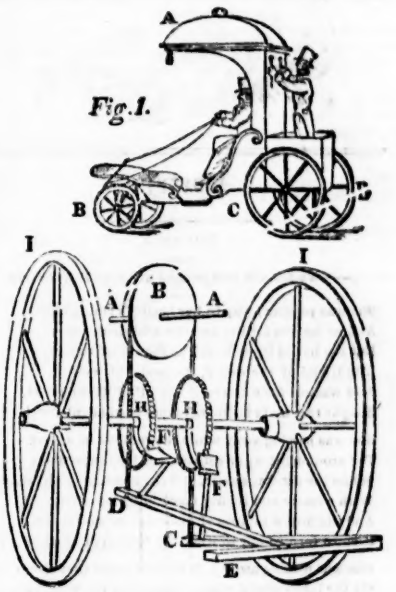

Fig. 1.

A CARRIAGE TO GO WITHOUT ANY OTHER FORCE THAN WHAT IT RECEIVES FROM THE PASSENGERS.

(From Hooper's Rational Recreations.)

This machine is represented by A B C D, (Fig. 1.) It is moved by the footman behind it; and the fore wheels, which act as a rudder, are guided by the person who sits in the carriage.*

Between the hind wheels is placed a box, in which is concealed the machinery that moves the carriage. A A, Fig. 2, is a small axis, fixed into the box. B is a pulley, over which runs a rope, whose two ends are fastened to the ends of the two levers or treddles C D, whose other ends are fixed in such a manner in the piece E, which is joined to the box, that they can easily move up and down. F F, are two flat pieces of iron, that are joined to the treddles, and take the teeth of the two wheels H H, which are fixed on the same axis with the hind wheels of the carriage, I I.

It is evident that when the footman behind presses down one of the treddles, suppose C, with his foot, he must bring down one of the pieces of iron F, and consequently turn the wheel H, that is next to it; and at the same time, by means of the rope that goes over the pulley, he must raise the other treddle D, together with its piece F, which being thrust down, will turn the other wheel H; and so alternately: and as the great wheels are fixed on the same axis, they must necessarily move at the same time.

It is easy to conceive that if the ends of the treddles next E, instead of being placed behind the carriage were turned the opposite way, so as to come under the feet of the person who sits in it, he might move it with equal, or even greater facility, than the footman, as it would then be charged with the weight of one person only.

A machine of this kind will afford a salutary recreation in a garden, or park, or on any plain ground, but in a rough or deep road must be attended with more pain than pleasure.

* This machine was invented by M. Richard, a physician of Rochelle, and was exhibited at Paris in the last century. It is described by M. Ozanam in his Recreations Mathematiques.

Tide Table.

Days.	*Morn.*		*Even.*		*Height.*		*Festivals, &c.*
	h.	m.	h.	m.	ft.	in.	
Tuesday ..18	1	5	1	28	20	6	
Wednesday 19	1	50	2	14	19	4	
Thursday 20	2	37	3	1	17	9	
Friday 21	3	26	3	54	15	9	Duke of Clarence b. 1765.
Saturday..22	4	24	4	58	13	10	
Sunday....23	5	34	6	14	12	6	10th Sunday after Trinity.
Monday ..24	6	55	7	38	12	1	St. Bartholomew.
Tuesday ..25	8	15	8	47	12	3	

Poetry.

STANZAS.

——we felt she was passing away!—*T. K. Hervey.*

She was passing away in her beauty's young bloom,
And no terrors for her had the cold silent tomb,
But she hailed its approach as the ark of repose,
The friend of the weary, the healer of woes;
And weaned from the world and its glittering toys,
Sought rest more enduring, more permanent joys!

She was passing away while the rosebud of spring
Did around her its sweetness, and loveliness fling,
While the air was serene, and the heavens bright shone
With a lustre and beauty resembling her own;
And life deck'd in hues of the rainbow's own dye,
Seemed formed but to wake the fond dreamings of joy!

She was passing away soft as moonbeam that sleeps
On the lake's placid mirror where low the wind sweeps;
She was passing away like the flow'ret that dies
Ere the shadows of night deep have mantled the skies;
Ere the last streak of sunset had passed from the wave,—
Ere hope, love, and freindship had found them a grave!—

She was passing away—she has passed—she is gone—
And her dwelling-place now is the cold churchyard lone,
And the form whereon beauty had set its own seal,
Do the shroud and the coffin now darkly conceal,
And a moment to earth, a brief moment but given,
Far away she has passed to the blessed in heaven!

She is gone, and the mourners their sables put on,
And wail for the loved that can never return,
And the tear, and the sigh, with mute eloquence speak
Of that which to syllable, words were but weak;—
Her worth and her beauty, with talent combined;
Her patient submission—her spirit resigned!—

She was passing away in her beauty's young bloom,
And in beauty undimm'd she has passed to the tomb;
And a spirit of light she is dwelling above,
And joins the glad chorus, the chorus of love!—
She was passing away—she is gone—she is blest,
And eternal the sunbeam that gladdens her breast.

Liverpool. G.

GOING TO LAW.

(From a Scotch Paper.)

The object of going to law is to settle disputes. This is the direct benefit sought for; but an incidental advantage sometimes arises where a case has been well contested, namely, that it also settles the disputants, and thus precludes the possibility of further litigation. This seems to be the moral of the following lines, in which we can assure our readers there is a great deal more of matter-of-fact than of poetry:—

An upper and a lower mill
Fell out about their water;
To war they went, that is, to law,
Resolved to give no quarter.

A lawyer was by each engaged,
And hotly they contended;
When fees grew slack the war they waged
They judged were better ended.

The heavy costs remaining still
Were settled without pother;
One lawyer took the upper mill,
The lower mill the other.

BELSHAZZAR'S FEAST.

Loud mocks the King; his flashing eye
Beams bright with impious revelry:
"Bring forth the cups," he cries, "that we may use
The goblets of the God of vanquished Jews!"

To his hot lip he rears the bowl,
What palsied shivering shakes his soul!
From his weak grasp the streams untasted fall,
His starting eye he rivets on the wall;

For there a slender finger draws
God's sentence, for his broken laws;
And he who late outbrav'd the boldest there,
Falls on his trembling knees and gasps a prayer.

Now see him gaze in abject fear,
On the late-scorn'd neglected seer;
Hark, from the lips of inspiration flow,
The words which wring the proud one's heart with woe.

Thy sway thou would'st not bear in peace,
A mighty God commands to cease;
Weigh'd justly in his great almighty scale,
Thy countless crimes sink low, thy virtues fail.

Sever'd in twain thy kingdom lies,
For other lords who now arise;
Hark, 'tis the Persians whom thou deem'st afar!
Hark, 'tis the Median trumpet sounds to war!

The troops of God from ambush spring,
Before them falls the shrieking king;
He dyes that hall in gore where late he trod
A monarch, blasted by an angry God!

Liverpool. G. W.

AUGUST.

Autumn comes, her gifts bestowing;
Filberts in the bosky dell—
Ruddy apples, richly glowing,
Luscious peach and jargonelle.
Fox-gloves on the cliffs are blooming,
Creeping wild thyme, purple heath,
Shed their sweets, the air perfuming,
Woodbine smiles, with spicy breath;
Nature's wealth and beauty blending,
Laughing Plenty loads the land,
Golden grain, in ripeness bending,
Courts the cheerful reaper's hand.
From ruthless sportsmen frightened muir-fowl fly,
But on the heath-bell fall, and fluttering, die.

Scottish Lit. Gazette.

WINGS.

BY T. K. HERVEY.

Oh! for the wings we used to wear,
When the heart was like a bird,
And floated, still, through summer air,
And painted all it looked on fair,
And sung to all it heard!
When fancy put the seal of truth
On all the promises of youth!

Oh! for the wings with which the dove
Flies to the valley of her rest,
To take us to some pleasant grove,
Where hearts are not afraid to love,
And truth is sometimes blest;
To make the spirit mount again,
That time has bow'd, and grief, and pain!

It may not—oh! it may not be!
I cannot soar on fancy's wing,
And hope has been,—like thee, like thee!
These many weary years, to me,
A lost and perish'd thing!
Are there no pinions left to bear
Me where the good and gentle are!

Yes,—rise upon the morning's wing,
And, far beyond the farthest sea,
Where autumn is the mate of spring,
And winter comes not withering,
There is a home for thee!
Away—away—and lay thy head
In the low valley of the dead!

AN ANSWER TO THE LOGOGRAPH.

(In number 473 of the Kaleidoscope, page 20.)

A thing that is *strange*, and that's nothing uncommon,
Is sometimes a man, and is sometimes a woman;
Though *strange* it may be, and a subject of wonder,
A right guess I have at its parts when asunder.
A *gnat* is the insect; a *rat* the small beast;
A *nest* is the bird's house; *great*, none of the least;
A *net* catches fish; to make leather we *tan*;
The *ear* always hears what is said if it can;
To *Gretna* sometime ago, wedding pairs ran;
With science *art's* coupled; and *anger* looks wild;
Old *age* you will own is far from a child;
The passions we see by the *tears* from the eyes;
For wrath we read *rage*; and a *sage* must be wise;
Ate is the goddess; a *stag* is the deer;
To the *east* well the point of the compass may veer;
The bridge in the width is a *strange* one you see;
Where there are nuns there will guarding *grates* be;
We smell *tar* on board ship, the *sea* see all round,
Then in our following wake is sure to be found;
The *tag* of our lace is at both ends; the *ant*
Is the emblem of industry; of sloth *rags* and want;
The enemy sowed *tares* while the husbandman slept;
At dinner we *eat*; in the *grate* is fire kept;
We ride in the *stage*, on the *stage*, at a *rate*;
Half a score is just *ten*; and we ride through a *gate*;
Neat dresseth the Quaker; *near* is always at hand;
Beneath us the *seat* is, but not when we stand;
Each morning we *range*; each quarter's *rent* pay;
To sailors a bright and night *star* shows the way;
Whilst blessed by kind *rest* you quietly lay;
Despatch'd, that is *sent*; a *grant* of crown-land;
Young boys *get* by heart; and men *earn* by hand;
The sun *sets* while he bows; the riddle's disclosed,
The secret is *strange*, well-divided, transposed.

Shrewsbury. S.

SOLUTION TO "LAST BOAT'S" QUESTION, IN THE KALEIDOSCOPE OF JULY 21.

Let Tom Unsworth's fortune be x^2, and John Frost's y^3; then per quest. $3x = 5y$, or $x = \frac{5y}{3}$, which should be a whole number; consequently, if, from this value of x, we take out as many integers as we possibly can, that is to say, if we divide by the denominator 3, we shall have $x = y + \frac{2y}{3}$; whence it follows, that $2y$ must be divisible by 3. Now, if we can divide $2y$ by 3, we may also divide its half, y, by 3. Let us, therefore, make $y = 3z$; we may now substitute for z, any integer number that will not make x or y negative:

If we make.....	$z = 1$	$z = 2$	$z = 3$	$z = 4$,
we have	$y = 3$	$y = 6$	$y = 9$	$y = 12$,
and	$x = 5$	$x = 10$	$x = 15$	$x = 20$,

Hence,

Tom's fortune,	$x^2 = 25$	$x^2 = 100$	$x^2 = 225$	$x^2 = 400$,
John's fortune,	$y^3 = 27$	$y^3 = 216$	$y^3 = 729$	$y^3 = 1728$.

Middlewich, August 7, 1829. H. S.

METEOROLOGICAL DIARY.

[From the Liverpool Courier.]

Barometer at noon.	Extreme during Night.	Thermometer 8 morning	Extreme heat During day.	State of the Wind at noon.	Remarks at noon
Aug.					
5 29 80	54 0	65 0	69 0	N.N.E.	Fair.
6 29 80	58 0	61 0	68 0	S.	Fair.
7 29 96	58 0	62 0	70 0	N.W.	Fair.
8 29 86	59 0	66 0	68 0	N.W.	Fair.
9 29 72	58 0	64 0	71 0	S.	Rain.
10 29 64	58 0	61 0	69 0	W.N.W.	Fair.
11 29 83	56 0	62 0	69 0	W.S.W.	Fair.

6th, Six, p.m. rain.
7th, Eight, a.m. rain.
9th, Four, p.m. heavy rain.
10th, Heavy rain during night.
11th, Eight, a.m. heavy rain.

The Traveller.

EXTRACT FROM TERRY'S VOYAGE TO INDIA.

TO THE EDITOR.

SIR,—The following extract is from pages 259 and 260 of "A Voyage to the East India Settlements, by E. Terry," which, if you think proper to insert in the *Kaleidoscope*, may, perhaps, be amusing to some of your numerous readers.—Yours, &c. A WIDOW'S SON.

St. Paul's-square, Liverpool, 1829.

"The Mahometans say that they have the books of Moses; but they have very much corrupted that story, in ascribing to Ishmael that which is said of Isaac, Gen. xxii. as if Ishmael should have been sacrificed, not Isaac, (of which more hereafter.) They say they have the book of David's Psalms, and some writings of Solomon, with other parts of the Old Testament, which, if so, I believe are made much to vary from the original. They speak very much in honour of Moses, whom they call *Moosa Calim-Alla*, Moses the Publisher of the mind of God; so of Abraham, whom they call *Ibrahim Carim-Alla*, Abraham the honoured or Friend of God; so of Ishmael, whom they call *Ismal*, the Sacrifice of God; so of Jacob, whom they call *Acob*, the Blessing of God; so of Joseph, whom they call *Eesoff*, the Betrayed of God; so of David, whom they call *Dahood*, the Lover and Praiser of God; so of Solomon, whom they call *Selymon*, the Wisdom of God,—all expressed as the former, in short Arabian words, which they sing in ditties unto their particular remembrances: and, by the way, many of the Mahometans there are called by the names of *Moosa*, or *Ibrahim*, or *Ismal*, or *Acob*, or *Eesoff*, or *Dahood*, or *Selymon*; so others are called *Mahmud*, or *Chaan*, which signify the Moon, or *Frista*, which signifies a star, &c. And they call their women by the name of flowers or fruit of their country, or by the names of spices, or odours, or of pearls, or precious stones, or else by other names of pretty or pleasing signification: as Job named one of his daughters *Jemimah*, which signifies clear as day; the second *Heziah*, which signifies pleasant as cassia, or sweet spice; and the name of the third *Heren-happuch*, signifying the horn, or strength of beauty, Job, chap. xlii, verse 14. But I will return again to that people, that I may acquaint my reader with one thing of especial observation, and it is this,—that there is not one among the Mahometans, of any understanding, who, at any time, mentions the name of our Blessed Saviour, called there *Hazaret Eesa*, the Lord Christ, but he makes mention of it with high reverence and respect; for they say of Christ, that he was a good and a just man; that he lived without sin; that he did greater miracles than ever any before or since him; nay, further, they call him *Rha-how-alla*, the Breath of God; but how he should be the Son of God, they cannot conceive, and therefore cannot believe. Perhaps the Socinians first took their opinion from these, which bids them to have every thing they receive as truth, to be cleared up unto them by strength of reason, as if there were no need of exercise of faith."

Natural History.

NATURAL APPEARANCES IN AUGUST.

(From the Companion to the Almanack.)

"Crowned with ears of corn, now come,
And to the pipe sing harvest-home."—*Dorset.*

DROUGHT.—When dry weather, usual at this season, has continued long enough to evaporate the water of shallow ponds, the young geologist will find it interesting to examine the form of the cracks made in the sludge at the bottom, as illustrative of the forms of columnar rocks on the Wernerian principle. Colonel Imrie gives a very fine instance of this, in which the current of a stream of water had worn away the bank which had inclosed the pond. On the side thus broken down and laid open, the soil displayed a beautiful arrangement of columnar forms, about eighteen feet in length, and from one and a half to three feet in diameter. They were all angular, consisting of four, five, and six sides. They were perfectly vertical, and the whole surface upon which the water had stood was level, and cracked into polygonal forms upon which Colonel Imrie stepped along as upon a giant's causeway. Similar phenomena are not rare, though seldom to be seen under such favourable circumstances for examination.

PLANTS.—In the pastures may now be observed patches and single stalks of grass, &c. in seed, untouched by cattle. This seems a wise provision of Nature for perfecting the seeds, and continuing the species; for, were cattle to browse on the grasses, while in flower or in seed, as most of them are annuals, the succeeding crops would be much injured. We may illustrate the same fact by referring to plants used for salads, which also are annuals, and as soon as they shoot into flower, and still more when they form seed, are not relished. We do not mean to assert generally, indeed, that all plants are avoided by animals when in flower or seed; but when the remark is limited to annuals and biennials it will hold almost universally. Not even snails and slugs, those indiscriminate devourers, will, in this case, touch a leaf.

INSECTS.—Flies begin to swarm into houses, in some places, in very troublesome numbers. Medically considered, swarms of house flies indicate unwholesome air, either from the vicinity or putrescent vegetable effluvia, or want of ventilation. They will, accordingly, be found most troublesome in the airless lanes, or narrow streets, of cities, and no less so in the localities of cottages, or farm-houses, when these are in the vicinity of stable-yards, dunghills, compost heaps, hot-beds, &c. Gnats, again, and other congeneric insects, indicate the neighbourhood of stagnant water and marsh land, a miasmatuous locality liable to low fevers, ague, and rheumatism.

BIRDS.—Swallows, and some other birds of passage, begin to congregate previous to undertaking their distant migratory expeditions. Their capability of performing flights much longer than there is any necessity for supposing, may be proved by numerous facts. Even a sparrow has been calculated to fly at the rate of not less than thirty miles per hour, and many experiments prove that the eider duck can fly ninety miles in the same time. The common kite *(Falco milvus)* has been observed to pass, without great exertion, over a space of a quarter of a league in a minute; and it could fly with ease from Cape Pruth to the Land's End, in a single day. M. Audubon, the distinguished ornithologist, has shot the passenger pigeon of America, and, on dissection, found its stomach full of fresh rice, which, to have resisted the digestive process, must have been swallowed not many hours preceding its death; but could not have been obtained within eight hundred miles of the place where it was killed. Though the nightingale, the willow-wren, and other birds of passage, fly with only half the swiftness, they may easily arrive in most parts of the South of Europe or the North of Africa in a few days.

QUADRUPEDS.—It is at this season that the burrel-fly *(œstrus bovis)* as it has been called, lays its eggs upon horses; and it may be remarked, that the most weakly or sickly horses are generally selected, as is the universal practice of parasitical animals as well as parasitical plants.

Motives to Migration in Birds.—The passage to our shores is a long and a dangerous one, and some imperative motive for it must exist; and, until facts manifest the reason, we may, perhaps without injury to the cause of research, conjecture for what objects these perilous transits are made. We know that all young creatures require particularly compounded nutriment during their infant state; and nature, as far as we are acquainted with it, has made in every instance provision for a supply of fitting aliment. In many instances, where the removal of station could not be conveniently accomplished, instinct has been given the parent to provide the fitting aliment for its new-born young. Thus insects, in some cases, store their cells with food ready for the animation of their progeny; in others, place their eggs in such situations as will afford it when they are hatched. The mammalia, at least the quadrupeds belonging to this class, which could least conveniently move their station, have supplies given them of a milky secretion for this purpose. Birds have nothing of this nature, and make no provision for their young; but they of all creatures, except fishes, can seek what may be required in distant stations with most facility. A sufficiency of food for the adult parent may be found in every climate, yet the aliment necessary for its offspring may not. Countries, and even counties, produce insects that differ, if not in species, at least in numbers; and many young birds we cannot succeed in rearing, or do it very partially, by reason of our ignorance of the requisite food. Every one who has made the attempt, well knows the variety of expedients he has resorted to, of boiled meats, bruised seeds, hard eggs, boiled rice, and twenty other substances that nature never presents, in order to find a diet that will nourish them: but Mr. Montagu's failure in being able to raise the young of the cirl bunting, until he discovered that they required grasshoppers, is a sufficient instance of the manifest necessity there is for a peculiar food in one period of the life of birds; and renders it probable, that, to obtain a certain aliment, the willow wren and others of the insect and fruit-feeding birds, direct their flight to distant regions, and is the principal cause of their migrations.—*Journal of a Naturalist.*

Cameron's Marking Ink.—We have made a trial of the Marking Ink advertised in another part of our paper, and can confidently recommend it to our readers, particularly as being much less troublesome in its application than any thing we know.—*Manchester Guardian.*

The following RESOLUTIONS are extracted from the printed Annual Report of a Meeting of Gentlemen, admirers and receivers of the Theological Writings of the Honourable EMANUEL SWEDENBORG, held at Warwick, 10th July, 1829.

Resolved,

1. That the Theological Writings of the Honourable Emanuel Swedenborg are entitled to the greatest respect and veneration of the Christian world, from the Scriptural, clear, and just views contained in them, of the true nature of the Redemption wrought by the Great Saviour.

2. That it is plainly predicted in the Word of the Old Testament, that the Lord from eternity, who is Jehovah, would descend into the world, and assume Humanity, for the purpose of saving and redeeming mankind.

3. That these Divine predictions, maintaining that Jehovah Himself would become the Redeemer and Saviour, are clearly expressed in many portions of the Holy Word, and especially in the following:—"*It shall be said in that day, Lo, this is our* God, *we have waited for Him, and He will save us: this is* Jehovah, *we have waited for Him; we will be glad and rejoice in His salvation,*" Isaiah xxv. 9.—"*The voice of one crying in the wilderness, prepare ye the way of* Jehovah, *make straight in the desert a highway for our* God," xl. 10, 11.—"*Sing and rejoice, O daughter of Zion; for, lo, I come, and I will dwell in the midst of thee, saith* Jehovah," Zech. ii. 10.

4. That, in agreement with these Divine predictions, Jehovah Himself is called the Redeemer and Saviour, as in the following passages: "*All flesh shall know that I* Jehovah *am thy* Saviour, *and thy* Redeemer," Isaiah xlix. 26.—"*I, even I, am* Jehovah, *and beside me there is no* Saviour," xliii. 11.—"*Thou, O* Jehovah, *art our Father, our* Redeemer, *thy name is from everlasting.*" lxiii. 16.—"*Thus saith* Jehovah, *the King of Israel, and his* Redeemer, Jehovah *of Hosts; I am the first and I am the last, and beside Me there is no God,*" xliv. 6, 24.—"*As for our* Redeemer, Jehovah *of Hosts is His name, the Holy one of Israel,*" xvii. 4.—"*Thus saith* Jehovah, *the* Redeemer *of Israel,*" xlix. 7.—"*And thou shalt know that I* Jehovah *am thy* Saviour *and thy* Redeemer," lx. 16.—"*I am* Jehovah *thy God from the land of Egypt, and thou shalt know no* God *but Me, for there is no* Saviour *besides Me,*" Hosea xiii. 4.

5. That Redemption was a work truly Divine, wrought by Jehovah Himself out of pure love towards the human race, and effected by the Humanity, in which he was from conception.

6. That in consequence of the Divinity and Humanity of the Lord being thus connected, the Lord, in the Gospel, speaks of the former as the Father, and of the latter as the Son, because the one was the Divine Producing Cause, and the other the Produced Effect: that hence, He says, "The words that I speak unto you I speak not of Myself, but the Father that dwelleth in Me, He doeth the works," John xiv. 10.

7. That the Sacred Scriptures do not teach that the Father and the Son are two separate and distinct Beings, but that they are two Essentials of the same Divine Being, just as the soul and the body are two essentials of man; which is manifest from the following declarations of the Lord Himself, "*If ye had known Me ye should have known My Father also: and from henceforth ye know Him, and have seen Him. He that hath seen* Me *hath seen the* Father. *Believe Me that I am in the Father and the Father in Me,*" John xiv. 7, 9, 11.—"*I and* [my] *Father are one,*" x. 10.

8. That the end for which the Lord put on Humanity was, that he might invest Himself with a medium by which, for the purpose of effecting Redemption, he could approach mankind, and, in that state of manifestation, suffer his Human Nature to be assaulted by infernal spirits; and, when thus assaulted, He might enter into Divine combates with the powers of hell, in order to restrain and prevent them from overwhelming and destroying the human race: thus the salvation of mankind was rendered possible, agreeably to the Divine declaration, "*I am come that they might have life, and that they might have it more abundantly.*" John x. 10.

9. That the passion of the cross was the last temptation which the Lord underwent while in the world, in which He, as "*The* Lord, *strong and mighty, the* Lord *mighty in battle,*" finally overcame and conquered hell, and thus accomplished the work of man's Redemption. The combats of the Lord with the infernal powers, and His victories over them, are plainly predicted in the following passages: Psalm cx. 1, xlv. 3, 5, lxviii. 1, 2. Isaiah lxiii. 1 to 4. Gen. iii. 15. See also John xii. 31. Luke x. 17, 18. Matt. viii. 16.

10. That during this Redeeming process, the Lord progressively made His Humanity Divine, in order that, having conquered hell, while in the world, He might thenceforth keep it in subjection to eternity; and thus He became, in that Humanity, the God of heaven and earth, and is present with His Church throughout all ages. Matt. xxviii. 18, 20. —AMEN.

N.B. The reader is referred for further information on this subject to the chapter on Redemption, in the Work entitled *True Christian Religion*, by the Honourable Emanuel Swedenborg.

Tales, Romances, &c.

[ORIGINAL.]

THE GENIUS OF PERSEPOLIS.

The moon shone in cloudless splendour amid the magnificent ruins of the ancient capital of Persia, as the philosopher Hamed wandered amid their gorgeous columns. His mind was sorrowful when he reflected on the sad mutability of all that is human, or formed by human agency. The glorious Persepolis, once the wonder of the East, whose gigantic pillars, on their mighty pedestals, seemed designed to mock the withering hand of Time; whose marble palaces appeared to deride the transit of rolling ages; where were they then? The gentle wind crept through their desolate remains, as though it mosned over these victims of decay.

"Ah, why," exclaimed Hamed, "why will haughty man erect the stately pile which serves but to display the futility of his utmost efforts? The palace moulders, the temple crumbles into dust; and he, the weak, vain-glorious founder, sleeps in forgetfulness amidst his frail creations!" A sigh, more audible than the breath of the whispering wind, echoed the sage's sad soliloquy. At the sudden and unexpected sound, amid those regions of loneliness and desolation, he started, and turned to the spot from whence the sound proceeded. But what was his surprise to behold, leaning against the basis of a marble pillar, a form radiant as the "son of the morning" ere he fell; yet with his lovely countenance sad as that of a mourner o'er the grave of the departed.

"Stranger!" said this more than mortal being, in strains as sweet as angels breathe, "thou seest before thee one of those genii who were formerly monarchs of the eastern world; but who are now rarely permitted to show themselves to the eyes of erring man. Dost thou sigh over the changes of corrupting flesh? Canst thou lament the miseries of the children of a day? What are the sorrows of human worms compared to ours? Forced to reside within the hidden chambers of the earth, burdened with an eternity which is not joined to happiness, our sole employment contemplating and pitying the actions of those pigmy beings who now people the globe that once was ours."

"But how," replied Hamed, "can you contemplate the actions of mankind? Said you not that you were prisoners in the chambers of the earth?"

"Child of the dust!" replied the genius, "ye know not the powers we once possessed, ere ambition drew upon us the anger of the Deity. Ye know not the wonders still retained by the magicians of the globe. Descend with me into the subterranean palace where I dwell, and witness the facility with which we view the actions of mankind."

A massy column unclosed at the touch of this supernatural being, and Hamed followed his conductor through passages beneath the surface of the earth, glittering with myriads of precious stones, and lighted by innumerable variegated lamps, until they reached a small chamber lined with plates of polished crystal, on each of which were reflected the scenes then passing in the various quarters of the globe.

"Incredulous mortal! cast thine eyes upon yonder magic mirrors, and view the actions of thy fellow-beings. Say, what seest thou?"

Hamed.—"I see a rock-encircled isle, round which a thousand vessels cut their way over the foaming waves; their decks are crowded with numbers of mariners strong as the elephant, active as the tiger-cat. With what rapidity they spring up the elastic cordage; yet how blunt and rough is their deportment! Surely those must be a most incongruous set of beings!"

Genius.—"True! the habitants of that small island are a complete anomaly; they unite in their composition the attributes of many very different animals; they are brave as the lion, yet dull as the bear! strong and aspiring as the eagle, yet sleepy as the owl! never contented unless they are quarrelling with all their neighbours, yet incessantly censuring their rulers for incurring the expenses of the wars which they can never be at rest without! assuming the right of settling the disputes of all other nations, yet perpetually at variance amongst themselves! boasting loudly of their 'land of liberty,' yet there is scarcely one of those weather-beaten tars who has not been torn from his family and friends to suffer toils and hardships, and perhaps to shed his blood in the service of his country!—Look at the seaman who is just now climbing the shrouds of that tall ship: he left his home as mate of a merchant-vessel: when within a few days' sail of the destined haven his ship was boarded by a host of pirates, who, merely to gratify their own capricious cruelty, precipitated him and several others into the deep: with great exertion he gained the shore of a small island, totally uninhabited, where he was compelled to subsist upon such shell-fish as he could find upon the beach, for the space of fourteen days; the sky his covering, and the rock his bed; by night drenched with the dews of heaven, and scorched by the beams of a tropical sun by day. Being at length rescued by the crew of a passing bark, he was compelled to work his passage to a distant land. After a lengthened absence he once more came in sight of his native soil. What joy might be seen depicted on his care-worn face, at the thought of again embracing his wife and children! The habitation he had left rises vividly to his imagination; not a spot is forgotten; and every fleeting moment seems an age, until he can again clasp those who had so deeply mourned for their lost supporter. But, alas! his joy was groundless, and his hopes in vain; for, ere he could spring upon the wished-for shore, a merciless band seized upon him, and bore him far away, to encounter all the perils of war, and writhe beneath the anguish of leaving his dearest ties a prey to indigence, and all the train of miseries that await the poor. Still will he fight for his enslavers, to the last drop of his blood, and think it his greatest glory to belong to that country which thus casts him from her bosom! Yet will the natives who people this very island, and who uphold a cruel and treacherous practice such as this, most bitterly inveigh against the private tribunals of other territories, and their secret decrees! How will they rave against the Spanish Inquisition, (which has generally *some* cause of complaint against its victims,) yet seize by stealth and send to certain hardships, thousands of their fellow-creatures, without even the pretence of an accusation, or the shadow of a crime! Nay, they will even doubt the existence of those concealed judgment-halls, formerly maintained in Germany, (a country so nearly connected with themselves,) tribunals whose fatal and sometimes unjust condemnations I have myself full often witnessed: one of which I will narrate to thee, to prove the fallibility of human judgments, and the errors to which the fancied wise ones of the earth are subject.

"There existed in Germany, some centuries since, a secret association, composed of many of the nobles of the country, whose self-delegated province it was to try the cause of such criminals as were beyond the reach of the common laws of the land. Their meetings were held in secret, and at midnight; and though all the members present debated upon the innocence or guilt of the accused, none except the judge and the accusers knew even the name of him they tried. Were he declared guilty, death was the punishment invariably decreed; yet, not to hurry his immortal spirit before a bar more awful than their own, without some preparation, a minister was chosen to give the destined victim three separate warnings. At the period at which I shall commence my tale, Augustus Friburg and Albert Steinbach had for some time been rivals for the affections of the lovely and amiable Adeline St. Maur. It was plainly perceptible which was the favourite suitor with the fair maid herself, although superior weight in the scale of fortune caused the wishes of her father (the Count St. Maur,) to lean towards the other candidate. Formed with the glowing and exquisite charms of a Hebe, Adeline was lively as the sportive fawn, yet gentle and innocent as the timid dove. Her waving locks, black as the raven's wing, fell over a brow of alabaster, and partially concealed the glances of her melting eyes, 'as blue as heaven.' But those fascinating glances stole forth with tenfold radiance, when they fell upon the manly and open countenance of Augustus Friburg, and were cast down and withdrawn with an internal shudder of undefined terror, when they chanced to encounter the stern heavy features of Albert Steinbach, which ill agreed with the dissembled smile that perpetually clothed them, like an ignis-fatuus playing over the drear abode of death. Both of these young men were members of noble families in the neighbourhood, and both possessed considerable property; but in this last respect the latter far excelled the former, which cause had alone delayed the union of Adeline with her beloved Augustus, her worldly-minded parent being unwilling that she should miss the acquisition of greater wealth than her favoured lover could bestow. Nevertheless, being upon a footing of intimacy with both families, he wished not to offend either by prohibiting their visits. The day had been wild and stormy, and the black and rugged Hartz Mountains, (upon the borders of which the residence of the Count was situated,) had been for the most part wrapped in mist and darkness. The rivals had met (as was frequently the case) to enjoy the society of Adeline, whose deportment, as well as that of Augustus, was precisely the same as usual. Not so the countenance and conduct of Albert Steinbach. His efforts to summon up his customary smile totally failed. He appeared moody and thoughtful; and, pleading the gloominess of the weather, joined to a violent headache, as the cause of his abstraction, he departed early to seek his home. Augustus remained some time longer, and would willingly still have lingered near his treasure, had not her fears for his safety urged his departure ere the shades of night added still more to the dreariness of the frowning mountains, a part of which he had to cross. The path he entered upon was craggy and dangerous, overhung on the one side by a forest of mighty oaks, whilst the other was bounded by a fearful precipice, along the bottom of which a headlong torrent forced its way, joining its impetuous roar to the groaning of the trees as they bent before the sweeping blast. The road (which on a night like this it would have been madness in a stranger to attempt) was pursued by Augustus without the slightest fear or anxiety; he had been accustomed to its hazardous declivities from his earliest boyhood, and therefore trod them with the certainty of perfect safety. He pursued his course at a swift pace, (as the hoarse growling of the distant thunder, and the vivid streaks of lightning cleaving the heavy clouds, warned him that a tremendous storm was approaching,) until he reached a narrow ledge, where the overshadowing rocks advanced so near to the edge of the precipice that much caution was requisite to enable him to pass without destruction. This pass was known by the name of 'The Crag of Death,' from the circumstance of a traveller (more timid than Friburg, and less sure-footed) having been, some years before, precipitated from it into the boiling flood, where he doubtless perished. Just as Augustus entered upon this dangerous path, a man, springing from a small cleft in the rock, with the rapidity of lightning aimed a dagger at his heart. But the blow of the intended assassin was not more swift than the upraised arm of Friburg, which received the gleaming steel; and though wounded, and tottering with the sudden stroke, he seized the murderous assailant with a powerful grasp, and in an instant hurled him into the abyss below. With such celerity had this transaction passed, that Friburg, on collecting his scattered ideas, could scarcely believe the whole scene to be other than the delusion of fancy. Not a single shriek had succeeded the fall of the wretched being, and the pass was desolate and lonely as though the foot of man had never pressed it. With more of dizziness than he had ever before experienced, did Augustus tread the fearful ledge, yet he still crossed it without further impediment or injury, and arrived at home just as the storm had com-

menced in all its fury. On exchanging his dress, he was surprised to perceive the loss of the dagger which he invariably wore, and he felt considerable chagrin at the accident, the weapon having been for many years in the family, and considered by them as a sort of heir-loom; yet, as it bore the arms of his family, he still hoped to have it restored to him, should any of the neighbouring peasantry chance to meet with it. On the ensuing morning, the storm, though furious whilst it continued, had totally subsided, and the rising sun shed his triumphant beams upon the wood-crowned mountains, when Friburg retraced the path which he before had trodden. He could not, without a shudder, look over the terrific ledge which had been the scene of the late conflict; and, as he gazed upon the roaring flood below, he became immediately convinced of the improbability of discovering the least trace of the ruffian he had cast into its waters, which had doubtless borne him, long ere this, into the rolling Elbe, and thence into the distant and unfathomable ocean. His arrival at the residence of the Count St. Maur was hailed with delight by the anxious Adeline, who had spent a sleepless night, listening to the storm, which she feared might possibly be sweeping her lover to destruction. Yet though the roses were banished from her cheek, she appeared, if possible, more lovely even than usual, as, with her still tearful eyes, she resembled the beauteous water-lily, raising its snowy face from the placid wave, to greet the first approaches of the god of day. Scarcely had Augustus concluded the relation of the preceding night's attack, when a messenger arrived from the Castle of Steinbach, to inquire after the safety of Albert, who had not been seen since the previous morning, and some fears were entertained for him, owing to the fury of the late tempest. The alarming intelligence of his having departed for home early in the day was communicated to his sorrowing friends. Every possible search was made, but made in vain; and the superstitious inhabitants of that wild country scrupled not to assert that he had been carried off bodily by the celebrated demon of the Hartz,—such conduct being by no means uncommon with that awful being, and many individuals having disappeared, within the last few years, who had never since been heard of. And one peasant went so far as to assert that he had actually seen this well-known forest monarch (crowned with his oaken wreath, and armed with his tremendous club) seize and bear away a comrade, named Walter Branmitz, who had appeared no more. Years followed years, and still brought no tidings of the lost Albert. The Count's scruples at accepting Friburg for his son-in-law had been removed by the disappearance of the wealthier candidate; and, united to his faithful Adeline, Augustus had for a considerable time experienced the greatest bliss which falls to the lot of mortals, when, as they were sitting together, one lovely summer's evening, in a bower of roses, watching with delight the gambols of a sportive boy, rosy as they, whilst the pale moon, as she scaled the lofty vault of heaven, shed her mild splendour upon the placid scene, a voice broke the pervading silence, and, in a tone deep as a summons from the tomb, pronounced the awful warning,—'Prepare for death.' Friburg sprang in an instant from his seat, and rushed from the arbour in the direction from whence the terrible sound seemed to proceed. He gazed around the extensive lawn, on every side, but its smooth verdant carpet, lit by the moonbeam, was untainted by a single shadow, and he returned to the bower to bear his wife, almost insensible with terror, to a safer resting-place. Great was the dismay of the whole family at this ill-boding warning, which was well known to be the precursor of death from the members of the Secret Tribunal. Unconscious of any crime to bring upon himself the vengeance of this terrible court, Friburg in a short time began to consider the warning in the light of a frolic, played by some of his neighbours, for the purpose of exciting and ridiculing his fears, and tranquillity once more began to reign over his happy household. But this tranquillity was destined too soon to be broken by the malice of his enemies.

On a bleak December evening, Adeline and her lord were standing before a window which commanded an extensive view of the surrounding country. The dark Hartz mountains were becoming indistinguishable in the deepening twilight, as the snow-flakes thickly careered through the air, borne upon the wings of the varying wind, like the fickle sons of men pursuing their devious and mingled courses over this transitory scene, to seek, like them, one common oblivion in their earthy bed. On a sudden a stronger blast rushed through the bending trees, and a mighty oak, undermined by the silent yet consuming force of years, and stooping low beneath its fleecy load, yielded before the gust, and fell crashing to the earth; and immediately a wild, deep voice arose in the air,—'As that tree falls, so shall fall the fated Friburg! Prepare for death, for the fiat of retribution hath gone forth!' So soon as the horror created by this second warning had in a slight degree subsided, Friburg, in a state of desperation, issued from the house, and searched with his servants every neighbouring grove or spot which could be supposed capable of affording shelter to an enemy, but the search was fruitless: even the spotless snow betrayed not a single trace of the foot of mortal, and the visitation of this mysterious being remained as inscrutable as ever. So horrid was the thought of what was hanging over this fated dwelling, that its inmates, who had, ere now, never felt so happy as when undisturbed by visitants, now courted society with eagerness, to endeavour to drive away reflection; yet still would reflection arise amid the gayest circles, like the dread simoom sweeping over Asia's fragrant beds of roses.

"A few months after this period, just as surly winter began to yield before approaching spring, the dwelling of Friburg was crowded with joyous guests. Merrily did the minstrels play, and brightly shone the glittering lamps, as a motley multitude of masks mingled in the festive hall. Friburg, the founder of the feast, and his fair Adeline, alone were sad; slowly they moved amid the brilliant crew, for the remembrance of the secret warnings still shed a cloud over their minds. They paused in the centre of a group of masks who had collected round some dancing girls, and as they witnessed the agility of these earthly fairies, once more the well-known voice sounded in Friburg's ear, uttering in a low, yet deep and distinct tone,—'Prepare for the death of a murderer. Thine hour is well nigh come!' Friburg turned round upon the instant, and seized upon a tall and athletic figure habited in the dark dress of an inquisitor, who was stationed close to his shoulder, convinced that he had at length discovered his secret foe. But what was his surprise, when, on the mask being removed, he saw beneath it the features of one of his most intimate and valued friends. To believe that this friend had acted as his tormentor was impossible, and as there had been no apparent movement amid the assembled group, each, at the earnest request of their host, removed his mask, and each proved a well-known intimate of the persecuted Friburg."

Edge-hill, July 27, 1829. G. W.

(To be continued.)

The Drama.

MR. KEAN.

TO THE EDITOR.

SIR,—I have had the pleasure of witnessing Mr. Kean's performances at the Theatre during the week, and have also read many criticisms upon the subject: but, in my opinion, the high encomiums passed upon his last Richard III are not so justly deserved as they have been zealously bestowed. I have seen him in most of his characters in the metropolis, and I cannot agree with some who pronounce his theatrical talents to be unimpaired by time. What he is now and what he was ten years ago will not bear a comparison. Whether the eulogists have an understanding with the manager, or are partially biassed in any other way, is no affair of mine, nor would I have hinted at these surmises but that I must lay down some cause for this egregious praise, and I would not insult their critical abilities by ascribing it to their real judgment. Could I but think it arose from the latter, I should be ready to exclaim with Hamlet,—"What devil hath cozened you at hoodman-blind!" But, "I'll not believe it." I should find more relief to my surprise in ascribing it to their politeness; and as good humour and gentleness are getting more into fashion than formerly, they merely do it "to entertain these fair well spoken days." Now, although all these reasons have revolved in my mind, still I own I wish so far to be in the said fashion as to judge more favourably of the consciences of these gentlemen, and place it all to the account of their charity, which will not suffer them to be harsh, or coldly just, with an old and inestimable servant of the stage, who has yielded us so much amusement and pleasure in past times. Well, if it be so, who can blame them? for, although judgment be good, and true criticism inestimable, yet all things must bow down to the higher principle. Even our very Scriptures inform us that charity ranks higher than either faith or hope, and, therefore, though we cannot have much faith in these eulogiums, nor hope of the pretended extraordinary resuscitation of Kean's fine and expressive action, yet we may well content ourselves with the idea that charity has found its way into the heart of critics.

But if you will allow me to give what I deem a fair delineation of Kean's late performances, I must say that on Monday evening, speaking of his general action, throughout the character it was faulty; and, although his dissimulation and assumed penitence to Lady Ann was very entertaining, still in the feeling part of the conversation, when he speaks of his being unmoved to tears by any thing but her beauty, not even at the death of his father, it was not so well supported as it should have been. His voice is too feeble for the proper euphony of the verse, which, therefore, ends at times in such a manner as would accuse him of mere rehearsal, instead of theatrical pronunciation, and it is easily perceptible that his spirits flag in a great many good parts of the character. He, indeed, seems to reserve himself in these for the more striking and bold traits of the passion; but to a delicate ear these secondary delineations, which he too much slights, are as interesting, or nearly so, as the more prominent. Indeed most actors do this; but with Kean, formerly, scarcely a word was lost by him, and no doubt this was partly the foundation of his well-deserved fame.

But to turn to the brighter side of the subject, which I do with more pleasure, there were some sparks discernible of his former colossal powers. When Buckingham asks the King how they must act if Hastings should prove obstinate, "Chop off his head, man!" reminded us of former times; and also when he inquires of Stanley concerning the readiness of his troops, the collected traits of suspicion, anger, inquisitiveness, and thirst for vengeance, were so well depicted in his countenance, that at that moment we could readily forgive all his other failings. The suppressed and hurried voice with which he inquires, "Where is thy power, then, to beat them back? where be thy tenants and thy followers?" was certainly very fine; here, I grant, he showed what he had been. The looks he exchanged with Richmond, just before his death, when mortally wounded by him, were most expressive and terrific. At that moment you could have imagined him the very man indeed of Shakspeare's depicting. Upon his fall his countenance wore a surprise, which was gradually succeeded by hatred, until at last it was worked into a most diabolical expression of malicious defiance, in which he went off.

His Othello, on Wednesday night, was better, *much better*; but those who pretend that his theatrical powers are undiminished, must be either very partial in their judgment, or in their memory very weak.

Yours, &c. OXONBURGH.

Thursday, Aug. 6, 1829.

LIST OF NEW PATENTS.

To H. R. Palmer, London Docks, for improvements in the construction of warehouses, sheds, and other buildings, intended for the protection of property.—Dated the 28th of April 1828.—2 months allowed to enrol specification.

To B. Cook, Birmingham, for an improved method of making rollers or cylinders of copper and other metals, or a mixture of metals, for printing of calicoes, silks, cloths, and other articles.—23d of April.—6 months.

To J. Wright, Newcastle-upon-Tyne, for improvements in condensing the gas or gases produced by the decomposition of muriate of soda and certain other substances, which improvements may also be applied to other purposes.—28th of April.—6 months.

To P. Pickering, Frodsham, Cheshire, and W. Pickering, Liverpool, merchants, for having invented an engine, or machinery to be worked by means of fluids, gases, or air, on shore or at sea, and which they intend to denominate Pickering's Engine.—28th April.—6 months.

To J. Davis, Lemon-street, sugar refiner, for a certain improvement in the condenser used for boiling sugar in vacuo.—28th of April.—6 months.

To G. W. Lee, Bagnio-court, Newgate-street, merchant, for certain improvements in machinery for spinning cotton and other fibrous substances.—2d of May.—6 months.

To H. Bock, Esq. Ludgate-hill, for improvements in machinery for embroidering or ornamenting cloths, stuffs, and other fabrics.—2d of May.—6 months.

To J. Dutton, junior, Wotton Underedge, Gloucester, clothier, for certain improvements in propelling ships, boats, and other vessels or floating bodies by steam or other power.—19th of May.—6 months.

To M. Dick, Irvine, Air, for an improved railroad, and for propelling carriages thereon by machinery, for conveying passengers, letters, intelligence, packets and other goods, with great velocity.—21st of May.—6 months.

To T. R. Williams, Esq. Norfolk-street, Strand, for improvements in the manufacturing of felt, or a substance in the nature thereof, applicable to covering the bottom of vessels, and other purposes.—23d of May.—6 months.

To T. Arnold, Hoxton, tin-plate worker, for an improved machine or gauge for the purpose of denoting the quality or strength of certain fluids or spirituous liquors, and for measuring or denoting the quantity of fluids or spirituous liquors withdrawn from the vessel in which the same are contained, and which machine or gauge may be so constructed as to effect either of the above objects without the other, if required.—26th of May.—6 months.

To W. Poole, St. Michael on the Mount, Lincoln, smith, for improvements in machinery for propelling vessels, and giving motion to mills and other machinery.—26th of May.—2 months.

To C. T. Sturtevant, Hackney, for improvements in the manufacturing of soap.—26th of May.—6 months.

To J. C. Daniell, Limpley Stoke, Bradford, Wilts, clothier, for improvements in machinery applicable to the dressing of woollen cloth.—26th of May.—6 months.

To R. Winans, Vernon, Sussex, State of New Jersey, North America, resident in London, for improvements in diminishing friction in wheeled-carriages to be used on rail and other roads, and which improvements are applicable to other purposes.—28th of May.—6 months.

To W. Mann, Gent., Effra-road, Brixton, for having discovered that by the application of compressed air, power and motion can be communicated to fixed machinery, and to carriages and other locomotive machines, and to ships, vessels, and other floating bodies.—1st of June.—6 months.

To A. Gottlieb, Jubilee-place, Mile-end-road, for improvements on, or additions to, locks and keys.—1st of June.—6 months.

To J. Smith, Bradford, York, for improvements in machinery for dressing flour.—4th of June.—2 months.

To C. Brook, Meltham Mills, near Huddersfield, York, for improvements in machinery for spinning cotton and other fibrous substances.—4th of June.—6 months.

To R. Porter, Carlisle, Cumberland, for improvements in the manufacture of iron heels and tips for boots and shoes.—13th of June.—2 months.

To F. Day, Poultry, optician, and Auguste Munch, mechanic, of the same place, in consequence of a communication made them by a certain foreigner residing abroad, and inventions by themselves, for improvements on musical instruments.—19th of June.—6 months.

To C. Wheatstone, Strand, for improvements in the construction of wind musical instruments.—19th of June.—6 months.

To M. Poole, Gent., Lincoln's Inn, in consequence of a communication made to him by a certain foreigner residing abroad, for improved machinery for preparing or kneading dough.—19th of June.—6 months.

Horses on Railroads.—We have always inclined to the use of horses on railroads in preference to almost any other *primum mobile* that has been named. There is, however, one very serious, and perhaps insuperable objection to horses being placed in front of the carriages, as in the event of falling, the poor animal or animals must necessarily be crushed to death. Whether the plan we are about to suggest has or has not any pretensions to novelty we know not, but we certainly anticipate no objection to it in theory. Why not yoke the horse behind, as a mill horse is yoked? The animal might, perhaps, lose some little of its force so harnessed; but it ought to be recollected, that on a railroad one horse will do more work than twenty-five horses on a common road.—In the Sporting Anecdotes there is an interesting experiment recorded, which we inserted at full length in the eighth volume of the *Kaleidoscope*, page 399. It took place near Croyden, and the result was, that the horse easily drew upwards of fifty-five tons.

Ingenious Mechanism.—A gentleman in Wigan has recently purchased a very handsome time-piece, the whole of which is made of paper (the bell and fingers excepted. It will go ten days by adjusting two weights. The paper of which it is made is white, and is lightly varnished, which gives it the appearance of ivory. The motion improves by use. It is very accurate in keeping time, and needs no repairs.—*Chester paper.*—If we are not much mistaken, there is a clock of this description now under repair at Mr. Condliff's, clock-maker, in Frazer-street, in this town. The substitution of paper for metal is, however, in our opinion, any thing but an improvement. The inventor, whoever he may be, has inverted the order of things;—Government has substituted a metallic currency for paper, and he has substituted paper for metal. Whether the invention be good for any thing or, as we suspect, good for nothing, the merit or demerit of these paper clocks belongs to the continent, and not to this country. Such clocks are quite common in France; and there is, probably, scarcely a clock-maker in Liverpool who has not had to rectify these clocks, which we are told, in the paragraph we have copied, "need no repairs."—*Edit. Kal.*

India.—The work entitled "A View of the Present State and Future Prospects of the Free Trade and Colonization of India," and advertised in our general advertisement, is one of the most important and generally interesting works that ever issued from the British press.—*See adv.*

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To Correspondents.

LIBRARY OF ENTERTAINING KNOWLEDGE.—If our correspondent, *A Caledonian*, will turn to our first page he will find his wishes anticipated, and he will probably be pleased to hear that we have in store two other articles on the same interesting subject.

OPHTHALMIC PHENOMENON.—We cannot banish the persuasion that our correspondent *H. S.* has been made the subject of a hoax by some wag, and we cannot venture to publish the statement unless it were verified by the person who actually witnessed the phenomenon.

THE DUKE OF WELLINGTON.—Our next number will contain a memoir of this statesman, with a striking likeness, engraved in the best style, by an eminent artist.

CARRIAGE TO GO BY WIND AGAINST THE WIND.—In our next we shall introduce a description and engraving of this curious carriage, from "Hooper's Recreations."

MUSIC.—The March, the insertion of which was promised, has not been forgotten. It shall appear as soon as possible.

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